

Cooperative Extension Service**CTAHR**College of Tropical Agriculture & Human Resources
University of Hawaii at Manoa**Food Safety and Technology**

Nov. 2001

FST-4

What You Should Know About Untreated Juice

Aurora Saulo Hodgson, Extension Specialist in Food Technology, Department of Tropical Plant and Soil Sciences

What is untreated juice?

Untreated juice is juice that has not been exposed to heat (e.g., pasteurization) or other appropriate processes (e.g., UV light treatment) designed to destroy microorganisms that can make people sick. Freezing untreated juice will not destroy all harmful bacteria.

What is the problem?

During the twentieth century, untreated juice was implicated as the cause of foodborne illness in at least 15 outbreaks in the United States. One sensational case occurred in 1996 when 70 people, including a child who died, became ill after drinking unpasteurized apple juice and cider contaminated with *E. coli* O157:H7. In another, in 1999–2000, hundreds of people in the USA and Canada were sickened and one died from consuming unpasteurized orange juice contaminated with salmonella.

It was previously believed that the acidic nature of orange juice and apple juice was sufficient to inhibit bacterial growth and protect consumers against foodborne illness. These recent outbreaks and results of laboratory studies, however, have demonstrated that salmonella can survive in orange juice for more than three weeks. When purchasing, preparing, or using fresh-squeezed fruit and vegetable juices, you should be aware that there currently are associated food safety issues.

How does fresh-squeezed, untreated juice become contaminated?

Bacteria, such as *E. coli* O157:H7, are naturally found in the intestines of animals and are shed in their droppings. When raw fruits and vegetables come in contact with the ground where there were animal droppings, the outside of the produce becomes contaminated. Any harmful bacteria that may be present in the soil are then

transferred to the produce and can become part of the finished product, such as juice.

Which juices are untreated?

Although about 98 percent of all juices sold in the USA are pasteurized, the serious outbreaks cited above were traced to consumption of unpasteurized juices. Since November 1999, the U.S. Food and Drug Administration has mandated that all unpasteurized or untreated juice products contain the following warning on the label or on a nearby sign:

“WARNING: This product has not been pasteurized and therefore may contain harmful bacteria that can cause serious illness in children, the elderly, and persons with weakened immune systems.”

Unpasteurized juice is normally found in the refrigerated sections of grocery or health food stores, at cider mills, and at farm markets. Pasteurized juice is normally found in the frozen section of grocery stores as concentrated juice; in the non-refrigerated sections as shelf-stable products in boxes, bottles, or cans; and in the refrigerated sections. Some juices that have been pasteurized may not state so on the label.

Why are some people more susceptible to foodborne illness due to untreated juice?

Most healthy adults have an immune system that can usually fight off the effects of harmful microorganisms. Some individuals, such as the very young, have immune systems that are not yet fully developed. Others, such as the elderly, pregnant women, the sick, and those undergoing chemotherapy or radiation, have immune systems that are weakened. These immunocompromised indi-

viduals are in the high-risk group and are more susceptible to foodborne illness than most healthy adults.

What are the symptoms associated with illness from drinking untreated juice?

Although symptoms usually occur within 1–3 days after consumption of untreated juice that has been contaminated, some people have manifested symptoms within 20 minutes, while others have taken up to 6 weeks to become ill. Symptoms usually include stomach cramps, vomiting, diarrhea, or flu-like symptoms such as fever, headache, and body ache. When *E. coli* O157:H7 is involved, symptoms can include bloody diarrhea within 2–10 days after consumption. Some immunocompromised individuals can further develop hemolytic uremic syndrome, which may require kidney dialysis and blood transfusions and can lead to permanent loss of kidney function and, sometimes, death. People who show these symptoms should immediately see their doctor, who can properly diagnose foodborne illness, identify the specific bacteria involved, and prescribe the best treatment.

What should consumers do?

FDA advises consumers to do the following:

Read the label. Unpasteurized juices are required to carry a warning statement on the label or as a separate sign. Be familiar with locations in stores where both pasteurized and untreated juices are usually found.

If still unsure, **ask** if the juice product is treated. If there is no definitive answer and you or someone in your family is in a high-risk group, you should either not use the product or boil the product for about 3 minutes before use.

When preparing your own juice, follow the correct processing procedures as described in USDA's *Complete Guide to Home Canning*, which can be found at <<http://www.foodsafety.org/canhome.htm>>.

For additional information, visit the Web site of the U.S. Food and Drug Administration's Center for Food Safety and Applied Nutrition at <<http://www.cfsan.fda.gov>>.

Remember the four simple safe food handling practices:

Clean: Wash hands and surfaces often.

Separate: Don't cross-contaminate.

Cook: Cook to the proper product temperature.

Chill: Refrigerate foods promptly.